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FENNO JACOBS FROM THREE LIONS

CHILEAN BEAUTY HEARS HER FORTUNE AS A GYPSY READS HER PALM

Though most Chileans are of Spanish descent, many peoples have contributed to the progressive South American nation (Bulletin No. 1). Ambrosio O'Higgins, father of Bernardo O'Higgins, "the George Washington of Chile," came from Ireland. Thomas, Lord Cochrane left England to command Chile's navy in the war for independence from Spain. Girl (right, above) is descended from a Yankee settler.

Bulletin No. 1, May 1, 1950

Shoestring Chile Is Child of Geography

THE recent travels of the president of Chile in the United States caused many a follower of current events to turn to the South American pages of his atlas and study the "Shoestring Republic." So called because of its shape and not from its method of doing business, Chile has carved a rich and respected place for itself among the nations of the world. And it has done so in spite of the adversities of geography.

For even the casual student of Chile soon learns that the splinterlike country is a child of geography. Not only its shape, but its history, politics, and economy have been dictated by geographic conditions.

Watersheds Are Province Boundaries

In the first place, the national boundaries are almost completely established by nature. The Andes, one of the world's highest and most massive barriers, walls Chile from the rest of South America. The Pacific, biggest of oceans, confines the country on the west. In between, a narrow strip averaging 110 miles wide, but stretching 2,600 miles long, is Chile.

Short, swift rivers course across the narrow shelf between Andes crest and Pacific beach. Usually the watershed of each stream is a separate province, with boundary lines following the dividing ridges.

Though strongly unified politically, the long land is divided geographically into three distinct sections. From north to south these are (1) the desert, "where it never rains"; (2) the valley, "where it rains half the year"; and (3) the forest, "where it rains all the time." Though exaggerated, there is much truth in these sweeping sayings.

The desert of Atacama is one of the most inhospitable areas in the world. Extreme heat and an almost total lack of rainfall make habitation impossible except in a few mining towns where water is piped in from the mountains. But the blistering sun shines down on one of the world's greatest natural treasure chests of mineral riches. North Chile furnishes almost the world's entire supply of natural nitrate of soda (for fertilizer), 90 per cent of the world's iodine, and 18 per cent of its copper.

Central Zone Has Largest Cities

In the valley—the fertile, well-watered central portion of the country—live four out of every five Chileans (illustration, cover). There lies some of the world's most productive farmland. Two of South America's larger cities—Santiago, the capital, and Valparaíso, its seaport (illustration, next page)—are in the central zone. Chief exports of the California-like region are farm products, wines, and fruits.

The forest zone, in the south, is a wet, mountainous, fjord-broken coast line reaching closer to the South Pole than any other mainland. Many islands fringe the irregular shore. Besides lumber, the region produces wool from many flocks. Coal and oil are being developed.

Though stretched almost to the breaking point, Chile packs more bulk than Texas on its skinny frame. And though crops can be raised on

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JACOB GAYER

MARIETTA, OLDEST SETTLEMENT IN OHIO, OVERLOOKS THE BEAUTIFUL OHIO RIVER (right) WHERE THE MUSKINGUM JOINS IT

The Poughkeepsie Regatta will become the Marietta Regatta this June as the college crews race their shells over a three-mile course near this historic town (Bulletin No. 2). Marietta was founded in 1788 by a group of New England Revolutionary soldiers of whom George Washington said, "I know many of the settlers personally and there never were men better calculated to promote the welfare of a community. No colony in America was ever settled under such favorable auspices."

Regatta Brings New Fame to Marietta, Ohio

NEW fame as a storehouse of Ohio River traditions is in view for Marietta as the historic Ohio city rushes a thousand and one preparations for its debut as host to the Intercollegiate Rowing Association's annual regatta on June 17.

Lore of the oar is already plentiful in the college community of 19,000 residents, which is replacing Poughkeepsie, New York, as the scene of the spring classic. Marietta lies where the broad Muskingum River joins the broader Ohio (illustration, inside cover), 172 river miles downstream from Pittsburgh, Pennsylvania. Mid-East Regatta races and other classics of the sport are perennials over a Muskingum River course.

Dam No. 18 Provides Placid Lake in River

Marietta citizens contributed funds for the unique Marietta College boathouse where regatta activities center. Located on the Muskingum's south bank opposite the town and college, the boathouse is built of big grindstones six feet in diameter, weighing two tons each. Making grindstones is a major Marietta industry. Sandstone quarries southwest of town supply the United States with most of its grindstones, pulpstones (for grinding wood to pulp), oilstones, and scythe stones.

Fifty-three dams create a 981-mile Ohio River deep waterway from Pittsburgh to Cairo, Illinois. Dam No. 18 backs up the water, always placid in June, on which the shells will race. The dam is eight miles downstream from Marietta. Its impounded waters extend to Lock and Dam No. 17, some four miles upriver from the town. The slack water also backs far up the Muskingum, which has its own system of locks.

Tide and current were the bane of past regattas on the Hudson. These are nil at Marietta. Also, the site is more convenient for crews from the west. Even the name, Marietta Regatta, provides timing rhythm for stroke-setting coxswains.

Crew racing is only one of Marietta's attractions. The River Museum, opened in 1941, preserves the atmosphere of vanished steamboat days. Its growing collections include 300 paintings of pioneer-to-present river scenes, and accurate scale models of a score of steamboats.

The River Museum occupies the basement of the state-owned Campus Martius Museum—a name that goes back to the beginnings of Marietta's colorful history.

First Settlers Were Not First

George Washington passed the site of Marietta in 1770 on his ten-day voyage down the Ohio, and spotted the river junction as a good site for Fort Harmar, built in 1785. Three years later, in 1788, General Rufus Putnam and 48 Revolutionary War veterans from New England came down the Ohio in a 50-ton galley they called the *Mayflower*.

These "first settlers" planted their community on the earthworks of the mound builders, the original inhabitants. Putnam named his settlement for Marie Antoinette, France's queen. He and his men built block-

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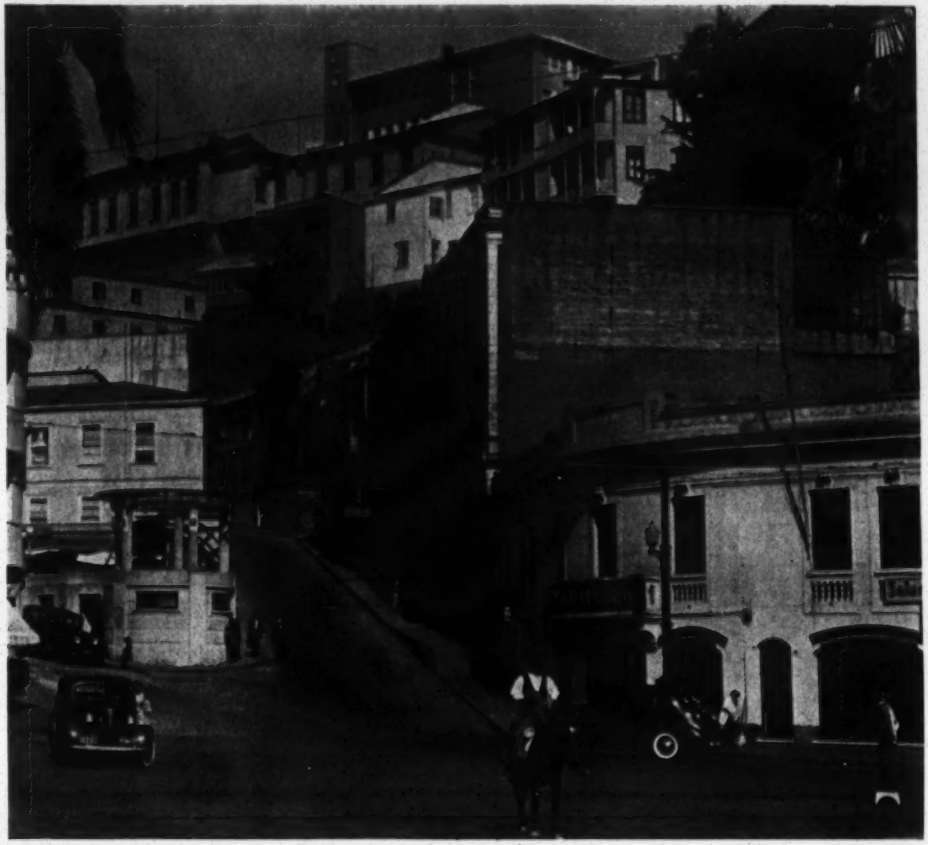
only five per cent of its area, its agricultural lands exceed those of Italy and other European countries. In fact, Chile is larger than any European land except the Soviet Union.

The estimated 6,000,000 inhabitants are descended from Spanish settlers and, to some extent, from the Araucanian Indians, who fought the invaders tooth and nail. About 100,000 pure-blooded Araucanians remain.

Chile's founding and settling by Pedro de Valdivia, the wars waged against the Indian leader Lautaro, Bernardo O'Higgins's struggle for freedom from Spain, and many other chapters of early history are fascinating as fiction. Independence came in 1810. A century later, the building of the Panama Canal brought Chile much closer to eastern America and to Europe. Since that time the United States has nearly always been Chile's best customer and supplier.

NOTE: Chile is shown on the National Geographic Society's map of South America. Write the Society's headquarters, Washington 6, D. C., for a map price list.

For further information, see "'Round the Horn by Submarine," in the *National Geographic Magazine* for January, 1948; "Capital and Chief Seaport of Chile," October, 1944; "Chile's Land of Fire and Water," July, 1941; and "Twin Stars of Chile," February, 1929.



THREE LIONS

THE PACIFIC PORT OF VALPARAÍSO, CHILE, IS FARTHER EAST THAN NEW YORK CITY

Iran's Demavend Dominates Southwest Asia

WITH some mountains, height above sea level is not the most important feature. Dominance of the surrounding countryside, perfection of line, and association with religion, history, or legend bring fame to many medium-size peaks over the world. But snow-crested Mount Demavend, in north central Iran (Persia), combines these characteristics with unusual height (illustration, next page).

A soaring landmark 45 miles northeast of Tehran, Iran's capital, and 45 miles south of the Caspian Sea, Demavend is the highest summit of southwestern Asia. It crowns the seemingly endless series of Elburz Mountain ridges in which it lies, rising to 18,934 feet above sea level.

Higher than Any European Peak

Thus, Demavend, paradise of Zoroaster, Persia's pre-Mohammedan prophet, is virtually twice as high as Mount Olympus, traditional home of the Greek gods; half again as high as Japan's Fuji, and nearly four times as high as China's Tai Shan. These are a few of the world's most legend-steeped, or "holy" peaks.

Demavend outrivals any mountain in Europe. It rises some 400 feet higher than Mount Elbrus, 720 air miles northwest, generally ranked as Europe's highest. Elbrus lies in the Caucasus barrier that divides Asia and Europe. The highest Alp, France's Mont Blanc, reaches 15,782 feet above sea level.

The Elburz range is itself a 12,000-foot wall between the Caspian depression, with water surface 85 feet below sea level, and the Iranian plateau to the south. Citrus groves, rice, cotton, and hardwood forests flourish in the moist warm region to the north. But the plateau lacks rain and is too dry to raise successful crops.

Demavend's conical form and evenly sloping sides indicate its volcanic nature. Numerous hot springs around its base label it quiescent rather than extinct. Gaseous fumes issue from small fissures in its usually snow-filled, bowl-like crater.

Climb Hampered by Powdery Pumice

Few natives of the region have tried to scale the mountain, holding it in superstitious awe. The first ascent by a European was in 1837, and several Europeans and Americans have achieved the summit since. Obstacles offered are few aside from cold, thin air, and fatigue. Supreme Court Justice William O. Douglas, ardent mountain climber, planned to scale the peak last summer when he was traveling in the area, but had to give up the project for lack of time.

Shifting fields of powdery pumice close to the summit make it hard not to slide back two feet for each foot of advance. One who struggles upward for an hour at this stage of the climb can safely descend over the same ground in three or four minutes.

When internal heat melts the snow about the summit, masses of basalt and limestone rocks and huge deposits of sulphur are revealed. Sulphur

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houses at the four corners of a 180-foot square, and erected homes for their families along the fences that enclosed the fort.

They named their stockade Campus Martius, meaning "field of war." Even before their families had arrived, it was the site of the inauguration of General St. Clair as first governor of the great new Northwest Territory.

General Putnam's home, which formed part of one of the blockhouses, is now preserved and enclosed within the modern building of the Campus Martius Museum (illustration, below). Other Marietta landmarks include the old Ohio Company Land Office; the park where Lafayette landed in 1825; Marietta College, founded in 1835; the boyhood home of former Vice-president Charles G. Dawes; and the 99-foot-high, spreading Rathbone Elm, one of America's largest.

NOTE: Marietta may be located on the Society's map of the Northeastern United States.

For additional information on the region, see "So Much Happens Along the Ohio River," in the *National Geographic Magazine* for February, 1950; "Ohio, the Gateway State," May, 1932; and "The Travels of George Washington," January, 1932.

JAMES A. G. DAVEY

HERE LIVED GENERAL RUFUS PUTNAM, FATHER OF MARIETTA

The well-built home is enclosed in brick walls for preservation. Originally it formed part of Campus Martius, the 180-foot-square stockade which Putnam, the builder of West Point, constructed as Ohio's first settlement.

ancient Medes and later one of Islam's most glorious cities.

Bulletin No. 4, May 1, 1950

Dolphin and Porpoise to Aid Sub Research

THE British navy is reported engaged in what might be termed "Operation Dolphin." This is a fishing expedition, its objective to capture a live dolphin or a porpoise for use in research.

From one of the ocean's most familiar and fascinating characters, naval scientists hope to obtain useful pointers on underwater propulsion.

Dolphins are well known to voyagers for their graceful leaping antics at the bows of ships. Mammals, rather than fish, dolphins and porpoises are smaller members of the whale family of cetaceans. They have scaleless, nearly hairless, fishlike bodies; large heads which merge neckless with their bodies; and fore limbs shaped like paddles.

Symbol of Submarine Sailors and Sun God

The porpoise and the dolphin are often referred to interchangeably. However, there are slight differences between them. The porpoise has a blunt snout, the dolphin generally has a tapering beak. Porpoises are more or less stay-at-homes, frequenting waters near shore, while dolphins range far to sea. Dolphins will follow a ship for days.

The dolphin was sacred to the Greek god, Apollo, who used it as his symbol. It appears on many ancient coins, as well as on the insignia of the United States Navy's submarine service.

The dolphin of this mammal group should not be confused with the spiny-finned fish of the same name, noted for its brilliant opalescent coloring. This latter creature, the coryphene, is a true fish. It has become famous for the fantastic color changes it undergoes when dying.

Especially interesting, in view of the use to which the British catch is to be put, is the fact that the cetacean dolphin and porpoise are air-breathing animals which have gone to sea and "made good" in their new environment.

Smooth and streamlined, these creatures can swim faster and with more apparent ease than most fish. They move at speeds that have been estimated at more than 30 miles an hour. They swim with an up-and-down motion unlike the usual side-to-side sweep of fish.

Such vertical movement often heaves the dolphin or porpoise far out of the water. It obviously is suited to animals which must reach the air frequently in order to breathe. Without air, the mammals would drown.

Dolphins Are Sociable by Nature

Most of the dolphin-porpoise family have a single dorsal, or back, fin. In size the creatures range from about five to 14 feet. Their nostrils are at the top of the head, providing the familiar whale "blow-hole." Like a submarine opening, this can be closed by a powerful valve.

Dolphins are playful and have a habit of sticking together. Traveling in groups ("schools"), they cavort in seemingly gay fashion. They even wear a curiously pleasant expression that resembles a smile.

The dolphin and/or porpoise has an old reputation as a friend of man. There have been reliable reports that these animals have saved the lives

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forms a gold cap, reaching 100 yards down from the rim of the crater to create a startling effect.

Close at hand are countless ridges of the Elburz chain. To the south a fringe of vegetation borders the vast desert visible to the horizon. Northward, mists and vapors rise over lush jungleland and the Caspian Sea.

NOTE: Mount Demavend appears on the Society's map of Europe and the Near East.

For additional information, see "Mountain Tribes of Iran and Iraq," in the *National Geographic Magazine* for March, 1946*; "Tai Shan, Sacred Mountain of the East," June 1945; "Iran in Wartime," August, 1943*; and "Old and New in Persia" and "Gilded Domes Against an Azure Sky" (13 color photographs), September, 1939. *(Issues marked with an asterisk are included on a special list of Magazines available to teachers in packets of ten for $1.00; issues unmarked are available at 50¢ a copy.)*

See also, in the GEOGRAPHIC SCHOOL BULLETINS for March 13, 1950, "Fujiyama, 'Sacred' Peak, Symbolizes Japan"; "Meshed Is Mecca for Iran's Shiite Sect," November 8, 1948; and "Tai Shan Scaled by Stupendous Stairway," November 1, 1948.

ORIENTAL INSTITUTE

PIERCING A CLOUD BANK, MT. DEMAVEND FORMS A PERFECT CONE BETWEEN EARTH AND HEAVEN

The majestic Persian peak has served as a gigantic guidepost for centuries. Its lonely grandeur has gripped the imagination of adventurers of all ages. Within its shadow a score of dynasties have risen and fallen. Beneath the village in the foreground moulder the ruins of Rhages, capital of the ancient Medes and later one of Islam's most glorious cities.

Navy Withdrawing from Valiant Midway

THE withdrawal of United States Navy personnel from Midway—that aptly named atoll in the heart of the vast Pacific—will close a proud and dramatic chapter of American naval history which had its climax in World War II.

Midway atoll, situated near the northwest end of the Hawaiian Islands, 1,300 miles from Honolulu, is a coral circle enclosing two islets, Sand and Eastern.

Battle of Midway Saved Island from Invasion

In United States hands when the Japanese struck at Pearl Harbor, this fortified position was an early enemy objective. But valiant defense saved the island from invasion. American victory over the major Japanese attack in the June, 1942, Battle of Midway ended Japan's hopes of capturing the "sentinel for Hawaii."

Though at heavy cost in men and equipment, the battle also taught valuable lessons in sea-air coordination, and opened the way for American counterattack in the South Pacific.

Midway's central location has made it not only strategic in war but useful for peacetime communications. Roughly halfway between the Asia and North America coasts, the islands are 2,545 miles from Tokyo, Japan; 3,205 miles from San Francisco, California. The Soviet port of Petropavlovsk, on Kamchatka Peninsula, is 2,105 miles northwest. Kodiak, Alaska, is 2,375 miles northeast.

The atoll which was eventually to be known as Midway was discovered and claimed for the United States in 1859 by Captain Brooks of the Hawaiian bark *Gambia*. Called Brooks Island at first, it was briefly, during the 1860's, a commercial coaling station.

In 1903 an American cable-relay station set up housekeeping on Sand Island, providing a convenient and much-desired telegraphic link between the Orient and the United States. A special grass was imported to bind and cover the islands' long-barren sandy stretches. Truck gardens sprang up. Giant ironwood from the Hawaiian Islands and eucalyptus from Australia took root.

Airline Abandoning Base

In 1935 Midway gained additional significance as a seaplane base for Pan American Airways, then initiating its transpacific clipper service. One of the last peacetime transients, arriving late in November, 1941, was Saburo Kurusu, Japan's special envoy dispatched to Washington on the eve of the surprise Pearl Harbor attack.

Today, following the Navy's decision to abandon the islands, reportedly because of budget problems, Pan American Airways has announced that it too will no longer maintain a base there. The radio navigational facilities of the Civil Aeronautics Administration at Midway also are going to be discontinued.

Thus, except for the remaining cable personnel, the islands once more

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of shipwrecked sailors by driving off sharks. Other stories tell of their rescue of drowning persons.

Such incidents, however, are explained not as friendly acts but as a consequence of the inquisitive nature of the cetaceans. Objects in the water naturally attract their attention and they have been seen to push such objects to the surface and roll them toward shore.

Actually, the dolphin and the porpoise are greedy and aggressive denizens of the oceans, and of the bays and river estuaries which they frequent. The wide "smiling" mouth contains rows of sharp teeth that make these mammals formidable enemies of large and small prey.

The world's most famous dolphin was "Pelorus Jack," which for some 41 years escorted ships into the harbor of Auckland, New Zealand. In 1904, after a passenger had shot—unsuccessfully—at the creature, the New Zealand government passed a law protecting it from harm. Later, when a successor appeared to Pelorus Jack, another protective law was enacted by the New Zealanders.

NOTE: For additional information, see "Whales, Giants of the Sea" and "Whales, Porpoises, and Dolphins" (31 paintings), in the *National Geographic Magazine* for January, 1940.

B. ANTHONY STEWART

TAME BOTTLENOSE DOLPHINS RALLY ROUND DIVER-WAITER WITH A LUNCH BASKET

On the floor of a tank at the Marine Studios, Marineland, Florida, dolphins hover around the hand that feeds them mullet. Denizens of the big aquatic establishment include many species. The dolphins share this tank with a vicious sting ray (foreground) and a blind jewfish (right).

will become the lonely haunt of the birds for which the atoll long has been famous.

Best known of Midway's winged inhabitants, which include canaries, gannets, frigate and moaning birds, terns, bosuns, and boobies, are the friendly gooney birds (illustration below). Their amusing antics eased the monotony and helped keep up morale of the Marine wartime garrison.

NOTE: The Midway Islands may be located on the Society's map of the Pacific Ocean and the Bay of Bengal, on which they appear in a large-scale inset.

For additional information, see "American Pathfinders in the Pacific," in the *National Geographic Magazine* for May, 1946*; and "Java Assignment," January, 1942.

DEE BREDIN

PARKED ON A MIDWAY BEACH, BABY ALBATROSSES AWAIT RETURN OF THEIR RESTLESS PARENTS

One of the sights of Midway is this "gooney parking lot," where young albatrosses, commonly called goonies, wait for their parents to come back. Adult albatrosses lead a "life on the ocean wave" quite literally. They are seldom seen on land after their young reach the age when they can fend for themselves. While the black-footed albatross *(Diomedea nigripes)* ranges far and wide over the Pacific, its offspring remains on Midway until the parents return—always on schedule.

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